

S/N TBD
Docket: CS02-096
Group art unit : __ TBD

Date September 12, 2003

**To: Commissioner of Patents and Trademarks
P.O. Box 1450 Alexandria, VA 22313-1450**

**Fr: William J. Stoffel Reg. No. 39,390 Cust No. 30402
PMB 455
1735 Market St - Suite A
Philadelphia, PA 19103**

Subject:

Serial No. TDB
Docket cs02-096
File Date: with application
Inventor: Lin et al.

Title: Half Tone Alternating Phase Shift Masks

Group art unit: TBD

INFORMATION DISCLOSURE STATEMENT

Enclosed is Form PTO A820 (also PTO-1449), Information
Disclosure Citation and references.

CERTIFICATE OF MAILING OR EXPRESS MAIL

I hereby certify that this correspondence is being deposited with the
United States Postal Service as express mail in an envelope addressed to:
Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450, on
September 13, 2003.

Signature/Date

William J. Stoffel
William J. Stoffel Reg. No. 39,390
Customer number 30402

S/N TBD
Docket: CS02-096
Group art unit : __ TBD

The following Patents and/or Publication are submitted to comply with the duty to disclose under CFR 1.97-1.99 and 37 CFR 1.56.

US 6,410,191B(Nistler et al.) that shows a single trench alternating PSM.

US 5,766,829(Cathey, Jr. et al.) shows a chromeless phase shift mask comprised of a pattern of parallel spaced phase shifters.

US 6,458,495B1(Tsai, et al.) shows a dual trench with undercut, alt-PSM.

US 6,355,399b1(Sajan et al.) shows a method for a dual damascene pattern comprising: exposing a one photoresist layers using a grey tone mask.

US 6,482,554(Matsunuma) shows a for a method for a dual damascene pattern comprising: exposing two photoresist layers using a grey (tri-tone) mask.

S. Vaidya, *Phase-Shifting Photomasks*, Semiconductor fabtech, Edition 1, Issued September 1994, S. Vaidya, AT&T

S/N TBD

Docket: CS02-096

Group art unit : __ TBD

Bell Laboratories, Murray Hill, New Jersey, USA, Website:

<http://www.semiconductorfabtech.com/features/lithography/articles/body1.171.php3> , 5/7/03

John S. Petersen, et al., Development of a Sub-100nm Integrated Imaging System Using Chromeless Phase-Shifting Imaging with Very High NA KrF Exposure and Off-axis Illumination, found on website;

[http://www.advlitho.com/content/Papers/SPIE microlith 02/4691-50 Petersen Conley et al.pdf](http://www.advlitho.com/content/Papers/SPIE%20microlith%204691-50%20Petersen%20Conley%20et%20al.pdf) , May 8, 2003 , discusses Chromeless Phase shift mask techniques.

Gerold, et al., *Multiple Pitch Transmission and Phase Analysis of Six Types of Strong Phase-Shifting Masks*, This material was presented at SPIE's 26th Annual International Symposium on Microlithography as presentation number 4346-72 , found on website:

<http://www.advlitho.com/content/Papers/4346-72paper.pdf> May 8, 2003. This reference discusses alternating phase shift masks.

S/N TBD

Docket: CS02-096

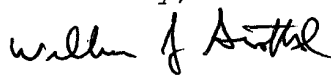
Group art unit : __ TBD

Armen Kroyan and Hua-yu Liu, *Effects of altPSM Design on
Image Imbalance for 65 nm, Semiconductor International,*

2/1/2003 [\[insite.net/semiconductor/index.asp?layout=article&articleId=CA\]\(http://www.e-insite.net/semiconductor/index.asp?layout=article&articleId=CA\)](http://www.e-</u></p></div><div data-bbox=)

[273367&spacedesc=webex](http://www.e-insite.net/semiconductor/index.asp?layout=article&articleId=CA273367&spacedesc=webex))

Sincerely,



William J. Stoffel

Reg. No. 39,390

Customer number 30,402

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)

CS02-096

Application Number

Applicant(s)

Lin et al.

Filing Date

Group Art Unit

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		US 6,410,191B1		Nistler et al.			
		US 5,766,829		Cathey, Jr. et al.			
		US 6,458,495B1		Tsai, et al.			
		US 6,355,399b1		Sajan et al.			
		6,482,554		Matsunuma			

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
							YES	NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

		S. Vaidya, Phase-Shifting Photomasks, Semiconductor fabtech, Edition 1, Issued September 1994, S. Vaidya, AT&T Bell Laboratories, Murray Hill, New Jersey, USA, Website: http://www.semiconductorfabtech.com/features/lithography/articles/body1.171.php3 , 5/7/03
		John S. Petersen, et al., Development of a Sub-100nm Integrated Imaging System Using Chromeless Phase-Shifting Imaging with Very High NA KrF Exposure and Off-axis Illumination, found on website; http://www.advlitho.com/content/Papers/SPIE_microlith_02/4691-50_Petersen_Conley_et_al.pdf , May 8, 2003 , discusses Chromeless Phase shift mask techniques.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

